

KENNEDY SPACE CENTER  
Apollo Program Directive

DATE: March 3, 1967

KSC APOLLO PROGRAM DIRECTIVE NO. 8

TO : Distribution

FROM:

*John H. ...*  
Apollo Program Manager

SUBJECT : Action Assignments Relative to AS-204 Accident

I. PURPOSE

The purpose of this directive is to establish a working committee and related sub-committees and identify responsibilities for taking action as required to implement the Apollo Program Manager's Directive #25 as it pertains to the Kennedy Space Center.

II. SCOPE

This directive shall include all KSC NASA Civil Service and Contractor elements working on the Apollo/Saturn Program.

III. REFERENCE

Apollo Program Directive No. 25, subject, Action Assignments Relative to AS-204 Accident, dated February 28, 1967.

IV. GENERAL

A KSC ad hoc committee is hereby established to coordinate and assure implementation of the referenced Apollo Program Manager's Directive. The committee will be chaired by the Apollo Program Manager with the following membership:

Director of Launch Operations  
Director of Design Engineering  
Director of Technical Support

The following sub-committees will be immediately activated:

- A. Egress Systems Design Review
- B. Emergency Training and Equipment
- C. On-Board Operations Monitoring
- D. Ground Communications
- E. Test Procedures
- F. MSC Studies Coordination

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The sub-committees will coordinate, track and report status of the required studies and redesign of procedures, systems and equipment. The studies and design will be performed by the responsible KSC element.

The Chairman of each of the above sub-committees will be responsible for calling meetings, assigning actions, and accomplishment of the assigned tasks. He will submit written status reports to the Chairman of the Center Committee each Thursday no later than 4:30 and be prepared to present the information orally the following Friday morning to the full Committee commencing March 9, 1967.

A plan of implementation with milestone and completion dates will be a minimum requirement due from each sub-committee in the first report.

Organizations assigned responsibilities in Section V will submit to the Chairman of the ad hoc committee the names of persons assigned to execute the responsibilities no later than March 6, 1967.

V. RESPONSIBILITIES

Following are the actions from the Apollo Program Manager's Directive No. 25 which require KSC participation. The identified sub-committees will coordinate, track, and report status of items listed below them.

A. Egress Design Review Sub-committee:

1. KSC shall review the vacuum chamber area and the launch pad facilities and make such changes in design and procedures as are necessary to assure effective emergency crew egress from the spacecraft. These changes shall be made prior to the next manned flight or manned ground test with a closed Command Module. Particular attention shall be paid to the access arm including the environmental chamber, the elevators and other escape path provisions. Necessary changes involving an interface with the flight crew or the spacecraft shall be coordinated with MSC.

2. Maintain a cognizance and assist as called upon in MSC's Emergency Egress Study. Following is a description of that study as assigned to MSC:

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- a. MSC shall complete the review of changes in the Command Module design and in procedures necessary for effective emergency crew egress and shall make the necessary changes before the next manned flight or manned ground test in a closed Command Module. This review shall consider aided and unaided emergency egress during ground test operations in vacuum chambers (at MSC, KSC and NAA) and on the launch pad with due consideration also to the normal mission requirements. Particular attention shall be paid to the design tradeoffs of a simply-operated, rapid-opening hatch protected from inadvertent operation. MSC shall coordinate with KSC to insure compatibility with KSC facilities and procedures.
  - b. MSC shall review MSC and NAA facilities and make such changes in design and procedures as are necessary for effective emergency crew egress before the next manned test in a closed Command Module.
3. The Director of Design Engineering shall chair this sub-committee with representatives of Launch Operations and Safety participating.
- B. Emergency Training and Equipment Sub-committee:
1. KSC shall re-examine all test operations for determination of hazardous operations associated with space vehicle testing and shall review the requirements for emergency equipment in launch complexes and the industrial area. Additional necessary emergency equipment shall be provided and those responsible for its use trained in its operation. Procedures shall be implemented for re-examination of requirements as changes in procedures or configuration make it necessary.
  2. KSC shall review current emergency training methods and implement any necessary actions to assure that all personnel directly engaged in manned testing in vacuum chambers, on the launch pad, or other hazardous operations or engaged in emergency assistance to personnel in hazardous areas be properly identified and trained.
  3. Launch Operations shall chair this sub-committee with representatives of Technical Support and Safety participating.

C. On-Board Operations Monitoring Sub-Committee:

1. Working with MSC, determine a means of using present on-board television and voice communications and possibly additional ground equipment to monitor and record operations within the spacecraft during hazardous test and, if possible, during the launch phase. This sub-committee shall identify compatible ground equipment and procedures to record spacecraft data. A joint implementation plan shall be prepared with MSC.
2. Launch Operations shall chair this sub-committee with representatives of Design Engineering participating.

D. Ground Communication Sub-committee:

1. Organize a working group with design and mission operations representatives from MSC, KSC, MSFC, OMSF, OTDA, GSFC, and AFETR to conduct a review of the ground communications system among the MSOB, CIF, MCC-H and launch complexes 34, 37 and 39. The review should include the number and characteristics of circuits; the number of drops on each circuit; interconnections of networks; monitoring and control provisions; checkout and maintenance procedures; and configuration control. Specific recommendations and an implementation plan for necessary changes for both long and short term improvements shall be submitted.
2. Director of Design Engineering shall chair this sub-committee with representatives of Launch Operations, Technical Support and the Apollo Program Office.

E. Test Procedures Sub-committee:

1. The Apollo Program Director will establish a working group (with KSC, MSC, MSFC, And OMSF membership) concerned with test procedure preparation, coordination, and approval. The working group shall prepare a manual for use in launch vehicle and spacecraft checkout and test operations at KSC. This manual shall contain the definitions of the KSC interfaces with MSC and MSFC as far as procedures and planning are concerned. Responsibilities and procedures for both contractor and NASA groups shall be included. This sub-committee shall represent KSC in this effort.

The following areas shall be included:

- a. Checkout Procedures, Test Preparation Sheets, Contract Work Authorizations.
  1. Methods and schedule for developing, reviewing, approving, publishing, and distributing test and checkout procedures
  2. Coordination with spacecraft and GSE configuration
  3. Coordination with flight crew and their checklists
  4. Review for hazardous operations and emergency requirements
  5. Incorporation of specific emergency instructions
  6. Change procedures, routine and expedited, both before and after tests start with required coordination and documentation procedures
  7. Control and documenting of trouble shooting during tests
  8. Approval requirements and authority, routine and expedited
  9. Review of test sequences by quality control personnel
  10. Relationship of spacecraft, launch vehicle, and integrated checkout procedures for major tests
- b. Test Planning
  1. Pre-test briefings
  2. Criteria for readiness of test and checkout procedures, configuration and crews
  3. Pre-test constraints and open item reviews of flight and ground support hardware and appropriate documentation
  4. Safety and emergency procedures briefings

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5. Voice Tape recording of as-run procedures
  6. Quality control review of test results and feedback
2. The Apollo Program Manager shall chair this sub-committee with representatives of Launch Operations and Technical Support participating.
- F. MSC Study Coordination Sub-committee:
1. Maintain a cognizance of the actions assigned to MSC by Apollo Program Manager's Directive #25 in order to provide single point support and coordination to their efforts. The scope of this sub-committee will exclude interface responsibilities previously assigned in this Directive.
  2. Director of Launch Operations shall chair this sub-committee with representatives of Technical Support, Safety and Design Engineering.

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